UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,462	02/11/2002	Hui Zhang	2717P056	8964

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EXAMINER
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ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/074,462	ZHANG ET AL.
Office Action Summary	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2002*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Application Number 10/074, 462 was filed on 02/11/2002.   Claims 1-44 are

subject to examination.

Specification

2.   The Abstract is objected to because of the following informalities. Appropriate

correction is required.

Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

4.   Claims 1- 29 and 31-44 are rejected under 35 U.S.C. 102(e) as being anticipated

by Mangipudi et al. (hereinafter Mangipudi(US 6, 728, 748 B1).

Referring to claim 1,

The reference teaches a system for allocating a resource to a service request

representing a request for a category of service selected from amongst a plurality of

possible categories (col. 9, lines 39-44) , comprising:

first logic for selecting, responsive to the selected category, a policy from

amongst a plurality of possible policies (col. 7, line 35-41) ; and

second logic for applying the selected policy to allocate a resource to the

request selected from one or more candidate resources (col. 10. line 26-46).

Referring to claim 2,

The reference teaches the system of claim 1 wherein the selected policy is a load

balancing policy (col. 10. line 26-46).

Referring to claims 3 and 4,

The reference teaches the system of claim 1 wherein the selected category of service is

a content-enabled category, and the system of claim 1 wherein the selected category of

service is a content-independent category. (col. 9, lines 45 through col. 10, line 31)

Referring to claim 5,

The reference teaches the system of claim 1 implemented in hardware as one or more

finite state machines. (Fig. 3, element 210).

Referring to claim 6,

The reference teaches the system of claim 1 wherein the first logic is configured to

determine the policy through an access to a table using an index derived from the

service request. (col. 9, line 39-44)

Referring to claim 7,

A system for allocating a resource to a service request comprising:

first logic for determining one or more candidate resources using a

hierarchical arrangement of data structures, the hierarchical arrangement having a

plurality of levels (col. 10. line 26-46, col. 11, lines 66 through col. 12, line 19) ; and

second logic for selecting one of the candidate resources, and allocating the

selected resource to the service request (col. 12, line 53-61).

Referring to claim 8,

The reference teaches the system of claim 7 wherein each of the data structures is a

table (col. 11, lines 66 through col. 12, line 19).

Referring to claim 9,

The reference teaches the system of claim 8 wherein an index derived from an entry in

a table at one level of the hierarchical arrangement is used to obtain an entry in the

table at a next level of the hierarchical arrangement (col. 12, line 53-61, col. 11, lines 66

through col. 12, line 19).

Referring to claim 10,

The reference teaches the system of claim 7 wherein the resource is a server, and the

hierarchical arrangement comprises a service index table, a super-group table, and a

server group table. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10,

lines 11-31, Fig. 2, col. 7, lines 21-55).

Referring to claim 11,

The reference teaches the system of claim 10 wherein an index to the service index

table is derived from the service request, and the index is used to access an entry in the

service index table specifying a super-group to be allocated to the request, and a load

balancing policy. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10,

lines 11-31, Fig. 2, col. 7, lines 21-55).

Referring to claim 12,

The reference teaches the system of claim 11 wherein an index derived from the super-

group allocated to the request is used to access an entry in the super-group table

specifying one or more server groups which are candidates for allocating to the request.

(col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10, lines 11-31, Fig. 2,

col. 7, lines 21-55).

Referring to claim 13,

The reference teaches the system of claim 12 wherein one of the candidate server

groups is allocated to the request through application of a suitable policy. (col. 7, lines

21-27, col. 10, lines 32-46)

Referring to claims 14 and 15,

The reference teaches the system of claim 13 wherein an index derived from the server

group allocated to the request is used to access an entry in the super-group table

specifying one or more servers which are candidates for allocating to the request, and

the system of claim 14 wherein one of the candidate servers is allocated to the request

through application of the load balancing policy specified by the entry in the service

index table. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10, lines

11-31, Fig. 2, col. 7, lines 21-55, col. 7, lines 21-27, col. 10, lines 32-46).

Referring to claim 16,

The reference teaches a system for allocating a resource to a service request

comprising:

first logic for specifying a plurality of resources which are candidates for

allocating to the request (col. 7, lines 21-55); and

second logic for accessing in parallel loading information for each of the

candidate resources (col. 11, line 48 through col. 12, line 1) ; and

third logic for allocating one of the candidate resources to the request

responsive to the accessed loading information (col. 12, line 53-61).

Referring to claim 17,

The reference teaches the system of claim 16 wherein the loading information for each

of the candidate resources is replicated across a plurality of memories, and the second

logic is configured to access each of the memories in parallel to obtain the loading

information. (col. 12, line 20-41)

Referring to claim 18,

The reference teaches the system of claim 16 wherein the third logic is configured to

allocate one of the candidate resources to the request through application of a load

balancing policy to the loading information for the candidate resources. (col. 12, line 53-

61).

Referring to claim 19,

The reference teaches a system for allocating a resource to a service request comprising:

first means for determining one or more candidate resources using a hierarchical arrangement of data structures, the hierarchical arrangement having a plurality of levels; and

second means for selecting one of the candidate resources, and allocating the selected resource to the service request. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10, lines 11-31, Fig. 2, col. 7, lines 21-55, col. 7, lines 21-27, col. 10, lines 32-46).

Referring to claim 20,

The reference teaches a method of allocating a resource to a service request representing a request for a category of service selected from amongst a plurality of possible categories, comprising:

determining a policy responsive to the selected category; and applying the policy to allocate a resource to the request selected from one or more candidate resources. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col. 10, lines 11-31, Fig. 2, col. 7, lines 21-55, col. 7, lines 21-27, col. 10, lines 32-46).

Referring to claims 21 and 22,

The reference teaches the method of claim 20 wherein the policy is a load balancing policy, and the method of claim 20 wherein the policy is determined through an access to a table using an index derived from the selected category of service. (col. 9, line 39-44).

Referring to claim 23,

The reference teaches a method of allocating a resource to a service request

comprising: determining one or more candidate resources using a hierarchical

arrangement of data structures, the hierarchical arrangement having a plurality of levels;

and selecting one of the candidate resources, and allocating the selected resource

to the service request. (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19, col.

10, lines 11-31, Fig. 2, col. 7, lines 21-55, col. 7, lines 21-27, col. 10, lines 32-46).

Referring to claim 24,

The reference teaches the method of claim 23 wherein each of the data structures in

the hierarchical arrangement is a table. (col. 11, lines 66 through col. 12, line 19).

Referring to claim 25,

The reference teaches the method of claim 24 further comprising deriving an index from

an entry in a table at one level of the hierarchy, and using the index to access an entry

in a table at a next level of the hierarchy. (col. 12, line 53-61, col. 11, lines 66 through

col. 12, line 19).

Referring to claim 26,

The reference teaches the method of claim 23 wherein the determining step comprises:

deriving an index to a service index table from the service request,

using the index to access an entry in the service index table (col. 12, line 53-61, col. 11,

lines 66 through col. 12, line 19), and

allocating a super-group to the request and determining a load balancing

policy responsive to the entry in the service index table (Fig. 2, col. 7, lines 21-55, col. 7, lines 21-27, col. 10, lines 32-46).

Referring to claim 27,

The reference teaches the method of claim 26 wherein the resource is a server (Fig. 2, element 206), and the determining step further comprises:

deriving an index to a super-group table from the super-group allocated to the request,

using the index to access an entry in the super-group table (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19);

determining from the entry one or more server groups which are candidates for allocating to the request, and

allocating one of the candidate server groups to the request (col. 9, lines 20-45).

Referring to claim 28,

The reference teaches the method of claim 27 further comprising allocating one of the candidate server groups to the request through application of a suitable load balancing policy. (col. 10, lines 33-46)

Referring to claim 29,

The reference teaches the method of claim 27 wherein the determining step further comprises:

deriving an index to a server group table from the server group allocated to the request (col. 12, line 53-61, col. 11, lines 66 through col. 12, line 19);

using the index to access an entry in a server group table (col. 12, line 53-61, col.

11, lines 66 through col. 12, line 19); and

determining from the entry the one or more servers which are candidates for

allocating to the request(col. 9, lines 20-45).

Referring to claim 31,

Claim 31 is a claim to the method that is carried out by the system of claim 7.

Therefore, claim 31 is rejected for the reasons for claim 7.

Referring to claim 32,

Claim 32 is a claim to the method that is carried out by the system of claim 16.

Therefore, claim 32 is rejected for the reasons for claim 16.

Referring to claim 33,

Claim 33 is a claim to the method that is carried out by the system of claim 17.

Therefore, claim 33 is rejected for the reasons for claim 17.

Referring to claim 34,

Claim 34 is a claim to the method that is carried out by the system of claim 18.

Therefore, claim 34 is rejected for the reasons for claim 18.

Referring to claim 35,

The reference teaches the system of claim 1 wherein the resource is a server. (Fig. 2,

element 206).

Referring to claim 36,

The reference teaches the system of any of claims 7 or 19 wherein the one or more

candidate resources are servers. (Fig. 2, element 206).

Reffering to claim 37,

The reference teaches the method of claim 20 wherein the resource is a server. (Fig. 2, element 206).

Referring to claim 38,

The reference teaches the method of any of claims 23 or 31 wherein the one or more Candidate resources are servers. (Fig. 2, element 206).

Referring to claim 39,

The reference teaches the method of claim 32 wherein the plurality of resources are servers. (Fig. 2, element 206).

Referring to claim 38,

The reference teaches the system of any of claims 1, 7, 16, or 19, wherein the resources are servers. (Fig. 2, element 206).

Referring to claim 41,

The reference teaches the system of any of claims 1, 7, 16, or 19, wherein the service requests are in the form of or spawned by packets. (col. 9, line 29 –32).

Referring to claim 42,

The reference teaches the system of any of claims 1, 7, 16, or 19, implemented as one or more engines. (Fig. 3, element 210).

Referring to claim 43,

The reference teaches the method of any of claims 20, 23, 31, and 32, wherein the resources are servers. (Fig. 2, element 206)

Referring to claim 44,

The reference teaches the method of any of claims 20, 23, 31, and 32, wherein the

service requests are in the form of or spawned by packets. (col. 9, line 29 –32).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the invention
> was made.

6.   Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Mangipudi et al. (hereinafter Mangipudi(US 6, 728, 748 B1) in view of Swildens (pub.

No. US 2001/0034792 A1)

Referring to claim 30,

The reference Mangipudi teaches wherein the resource is a server, (Fig. 2, element

206).

The reference Mangipudi fails to explicitly teach allocating the selected server to the

request only if a server is not allocated to the request through application of a

persistence policy.

The reference Swildens teaches at page 1, para. [0015], "Persistence is the ability to

keep an individual user session tied to a single machine. Almost all load balancers

have various policies for scheduling and maintaining persistence.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to employ the teachings of the reference Swildens into the policy engine such that the selected server is allocated to the request only if a server is not allocated to the request through application of a persistence policy.

This would have been obvious because all packets from the individual user will be sent to the machine that he is persistent with. That way, a machine can maintain the state of the user since the user is always scheduled to the same machine as taught by Swildens.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp
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